MP

FILEID**MPDAT

```
MM      MM  PPPPPPP   DDDDDDD       AAAAAA    TTTTTTTTTT
MM      MM  PPPPPPPP  DDDDDDD       AAAAAA    TTTTTTTTTT
MMMM  MMMM  PP     PP DD     DD  AA       AA      TT
MMMM  MMMM  PP     PP DD     DD  AA       AA      TT
MM  MM  MM  PP     PP DD     DD  AA       AA      TT
MM  MM  MM  PP     PP DD     DD  AA       AA      TT
MM      MM  PPPPPPPP  DD     DD  AA       AA      TT
MM      MM  PPPPPPPP  DD     DD  AA       AA      TT
MM      MM  PP        DD     DD  AAAAAAAAAAA      TT      ....
MM      MM  PP        DD     DD  AAAAAAAAAAA      TT      ....
MM      MM  PP        DD     DD  AA       AA      TT      ....
MM      MM  PP        DD     DD  AA       AA      TT      ....
MM      MM  PP        DDDDDDD    AA       AA      TT
MM      MM  PP        DDDDDDD    AA       AA      TT

LL            IIIIII      SSSSSSSS
LL            IIIIII      SSSSSSSS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II        SSSSSS
LL              II        SSSSSS
LL              II              SS
LL              II              SS
LL              II              SS
LL              II              SS
LLLLLLLLLL    IIIIII      SSSSSSSS
LLLLLLLLLL    IIIIII      SSSSSSSS
```

MPDAT
V04-000
        - MULTI-PROCESSING DATA BASE   H 1   16-SEP-1984 02:00:27   VAX/VMS Macro V04-00   Page 1
                                                 5-SEP-1984 15:12:49   [MP.SRC]MPPREFIX.MAR;1   (1)

```
0000    1 ;
0000    2 ; Version:        'V04-000'
0000    3 ;
0000    4
0000    5         .MCALL  MFPR
0000    1         .TITLE  MPDAT - MULTI-PROCESSING DATA BASE
0000    2         .IDENT  'V04-000'
0000    3
0000    4
0000    5 ;*******************************************************************
0000    6 ;*                                                                 *
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0000   24 ;*                                                                 *
0000   25 ;*                                                                 *
0000   26 ;*******************************************************************
0000   27 ;
0000   28 ;
0000   29 ;++
0000   30 ;
0000   31 ; Facility: Executive , Multi-processing data base
0000   32 ;
0000   33 ; Abstract: Data base of multi-processing information
0000   34 ;
0000   35 ; Environment: MODE=Kernel
0000   36 ;
0000   37 ; Author: Kathleen D. Morse, Creation date:  08-Jul-1981
0000   38 ;
0000   39 ; Modified by:
0000   40 ;
0000   41 ;       V03-005 KDM0020         Kathleen D. Morse       04-Oct-1982
0000   42 ;               Add a counter and error log message for the invalidate
0000   43 ;               loop time-out logic.
0000   44 ;
0000   45 ;       V03-004 KDM0012         Kathleen D. Morse       20-Sep-1982
0000   46 ;               Add second error log buffer.
0000   47 ;
0000   48 ;
0000   49 ; 01    -
0000   50 ;--
```

MPDAT
V04-000

I   1
                                          - MULTI-PROCESSING DATA BASE   16-SEP-1984 02:00:27 VAX/VMS Macro V04-00   Page 2
                                                                                5-SEP-1984 02:06:11 [MP.SRC]MPDAT.MAR;1   (1)

```
                0000    52 ;
                0000    53 ; Macro Library Calls
                0000    54 ;
                0000    55
                0000    56         $CADEF                                    ; Define conditional assembly parameters
                0000    57         $EMBDEF                                   ; Define error message buffer header
                0000    58         $MPSDEF                                   ; Define secondary processsor states
                0000    59
                0000    60 ;
                0000    61 ; Equated Symbols
                0000    62 ;
                0000    63
                0000    64 ;
                0000    65 ; Local Data
                0000    66 ;
                0000    67
        00000000    68         .PSECT  $$$$MPDATA,LONG,WRT
                0000    69
                0000    70
                0000    71         .ALIGN  LONG
                0000    72
                0000    73 ; Major pointers - Initialized by MPLOAD
                0000    74
                0000    75 MPS$AL_MPMBASE::                                  ; Base VA of multiport memory registers
00000000    0000    76         .LONG   0                                    ;
00000000    0004    77         .LONG   0                                    ;
00000000    0008    78         .LONG   0                                    ;
00000000    000C    79         .LONG   0                                    ;
                0010    80 MPS$GL_CURPCB::                                   ; Secondary processor current PCB
00000000'   0010    81         .LONG   SCH$GL_NULLPCB                       ;
                0014    82 MPS$GL_STATE::                                    ; State of secondary processor
00000005    0014    83         .LONG   MPS$K_INITSTATE                      ; Initially set to INIT state
                0018    84                                                  ;
                0018    85                                                  ; 1 => Idle
                0018    86                                                  ; 2 => Drop; CURPCB correct
                0018    87                                                  ;           (SVPCTX done)
                0018    88                                                  ; 3 => Busy; CURPCB correct
                0018    89                                                  ;           (LDPCTX not yet done)
                0018    90                                                  ; 4 => Execute; CURPCB correct
                0018    91                                                  ;           (LDPCTX done)
                0018    92                                                  ; 5 => Init
                0018    93                                                  ; 6 => Stop
                0018    94
                0018    95 MPS$GL_PRIMSKC::                                  ; Primary processor interrupt clear
00000000    0018    96         .LONG   0                                    ;
                001C    97 MPS$GL_PRIMSKT::                                  ; Primary processor interrupt trigger
00000000    001C    98         .LONG   0                                    ;
                0020    99 MPS$GL_SCNDMSKC::                                 ; Secondary processor interrupt clear
00000000    0020   100         .LONG   0                                    ;
                0024   101 MPS$GL_SCNDMSKT::                                 ; Secondary processor interrupt trigger
00000000    0024   102         .LONG   0                                    ;
                0028   103 MPS$GL_INVALID::                                 ; Invalidate address
00000000    0028   104         .LONG   0                                    ;
                002C   105 MPS$GL_MPMIIR::                                  ; MA780 interrupt request register adr
00000000    002C   106         .LONG   0                                    ;
                0030   107 MPS$GL_BUGCHECK::                                 ; Indicator for bugcheck status
00000000    0030   108         .LONG   0                                    ;
```

```
                              0034    109 MPS$GL_STOPFLAG::                              ; Indicator for STOP/CPU requrests
                     00000000 0034    110         .LONG   0                             ;
                              0038    111 MPS$GL_INTERLOCK::
                     00000000 0038    112         .LONG   0                             ; Interlock used to flush cache
                              003C    113 MPS$GL_PFAILTIM::                             ; Indicator if powerfail in progress
                     00000000 003C    114         .LONG   0                             ;    0 => none in progress
                              0040    115                                               ;  non-0 => time of day register
                              0040    116                                               ;            when powerfail occurred
                              0040    117 MPS$GL_SECREQFLG::                            ; Indicator for secondary requests
                     00000000 0040    118         .LONG   0                             ; MPS$V_SECBUGCHK - bugcheck request
                              0044    119                                               ; MPS$V_SECERRLOG - error log request
                              0044    120 MPS$GL_ERLBUFIND::                            ; Secondary error log buffer indicator
                     00000000 0044    121         .LONG   0                             ; MPS$V_ERLBUF1 - set if buffer 1 busy
                              0048    122                                               ; MPS$V_ERLBUF2 - set if buffer 2 busy
                              0048    123
                              0048    124 MPS$GL_ERLSEQNUM::                            ; Secondary error log sequence number
                     00000000 0048    125         .LONG   0                             ; incremented for each error log attempt
                              004C    126
                              004C    127 MPS$GL_SAVEDAP::                              ; Saved value of secondary AP
                     00000000 004C    128         .LONG   0                             ;  used at boot time
                              0050    129
                              0050    130 MPS$GQ_MPSTRTIM::                             ; 64-bit time and date when multi-
                     00000000 0050    131         .LONG   0                             ;  code was loaded.  Used by MONITOR
                     00000000 0054    132         .LONG   0                             ;  to recognize STOP/CPU occurred.
                              0058    133 MPS$GL_INV_NACK::                             ; Indicator that secondary did not
                     00000000 0058    134         .LONG   0                             ;  acknowledge an invalidate request
                              005C    135
                              005C    136 ;
                              005C    137 ; Secondary Timer Performance Statistics
                              005C    138 ;
                              005C    139
                     00000002 005C    140         .IF NE  CA$_MEASURE                   ; Check for measurement enabled
                              005C    141
                              005C    142         .ALIGN  LONG
                              005C    143 MPS$AL_CPUTIME::                              ; Performance measurement array for
                              005C    144                                               ; time spent in different modes:
                     00000000 005C    145         .LONG   0                             ;     kernel
                     00000000 0060    146         .LONG   0                             ;     executive
                     00000000 0064    147         .LONG   0                             ;     supervisor
                     00000000 0068    148         .LONG   0                             ;     user
                     00000000 006C    149         .LONG   0                             ;     on interrupt stack
                     00000000 0070    150         .LONG   0                             ;     compatibility mode
                              0074    151
                              0074    152 MPS$GL_NULLCPU::                              ; Null process cpu time
                     00000000 0074    153         .LONG   0                             ;
                              0078    154
                              0078    155         .ENDC
                              0078    156
                              0078    157 ;
                              0078    158 ; The following is error log text that the primary writes into the
                              0078    159 ; error log as system service type entries...merely ASCII text.
                              0078    160 ;
                              0078    161 MPS$T_INV_NACK::
6F 72 70 20 64 65 68 63 61 74 74 41 0078    162         .ASCII  \Attached processor did not acknowledge invalidate request.\
6E 20 64 69 64 20 72 6F 73 73 65 63 0084
64 65 6C 77 6F 6E 6B 63 61 20 74 6F 0090
74 61 64 69 6C 61 76 6E 69 20 65 67 009C
```

```
              2E 74 73 65 75 71 65 72 20 65  00AB
6D 65 74 73 79 73 20 65 68 54 20 20  00B2         163                   .ASCII  \  The system has been degraded to a single 11/780.\
65 64 20 6E 65 65 62 20 73 61 68 20  00BE
20 61 20 6F 74 20 64 65 64 61 72 67  00CA
38 37 2F 31 31 20 65 6C 67 6E 69 73  00D6
                          2E 30       00E2
                  0000006C  00E4         164 MPS$C_INV_NACK == . - MPS$T_INV_NACK
                            00E4         165
                            00E4         166 ;
                            00E4         167 ; The following data does not fit into the header page
                            00E4         168 ; of the multi-processing code, and therefore is positioned
                            00E4         169 ; after the secondary's SCB.
                            00E4         170 ;
                  00000000               171         .PSECT  $$$ERLBUF,QUAD,WRT
                  00000004  0000         172         .LONG   EMB$K_LENGTH              ; Error log message buffer header
                            0004         173 MPS$AL_ERLBUF1::                           ; Secondary error log buffer 1
                  00000200  0004         174         .BLKB   MPS$K_ERLBUFSIZ-EMB$K_LENGTH ; (Holds 1 message of maximum size)
                  00000004  0200         175         .LONG   EMB$K_LENGTH              ; Error log message buffer header
                            0204         176 MPS$AL_ERLBUF2::                           ; Secondary error log buffer 2
                  00000400  0204         177         .BLKB   MPS$K_ERLBUFSIZ-EMB$K_LENGTH ; (Holds 1 message of maximum size)
                            0400         178
                            0400         179
```

MPDAT
V04-000

L 1

- MULTI-PROCESSING DATA BASE   16-SEP-1984 02:00:27   VAX/VMS Macro V04-00   Page 5
  Interrupt Stack for Secondary processor   5-SEP-1984 02:06:11   [MP.SRC]MPDAT.MAR;1   (1)

```
                     0400   181                .SBTTL   Interrupt Stack for Secondary processor
                     0400   182 ;
                     0400   183 ; Interrupt stack reservation for secondary processor
                     0400   184 ;
                 00000000   185                .PSECT  $$$INTSTK,LONG,WRT
                     0000   186                .ALIGN  LONG
        00000400     0000   187                .BLKB   512*2                        ; 2 Pages
                     0400   188 MPS$AL_INTSTK::                                      ; Empty stack pointer
                     0400   189                .END
```

M 1

MPDAT   - MULTI-PROCESSING DATA BASE   16-SEP-1984 02:00:27 VAX/VMS Macro V04-00   Page 6
Symbol table   5-SEP-1984 02:06:11 [MP.SRC]MPDAT.MAR;1   (1)

```
CAS_MEASURE            = 00000002
EMB$K_LENGTH           = 00000004
MPS$AC_CPUTIME           0000005C RG   02
MPS$AL_ERLBUF1           00000004 RG   03
MPS$AL_ERLBUF2           00000204 RG   03
MPS$AL_INTSTK            00000400 RG   04
MPS$AL_MPMBASE           00000000 RG   02
MPS$C_INV_NACK         = 0000006C  G
MPS$GC_BUGCHECK          00000030 RG   02
MPS$GL_CURPCB            00000010 RG   02
MPS$GL_ERLBUFIND         00000044 RG   02
MPS$GL_ERLSEQNUM         00000048 RG   02
MPS$GL_INTERLOCK         00000038 RG   02
MPS$GL_INVALID           00000028 RG   02
MPS$GL_INV_NACK          00000058 RG   02
MPS$GL_MPMIIR            0000002C RG   02
MPS$GL_NULLCPU           00000074 RG   02
MPS$GL_PFAILTIM          0000003C RG   02
MPS$GL_PRIMSKC           00000018 RG   02
MPS$GL_PRIMSKT           0000001C RG   02
MPS$GL_SAVEDAP           0000004C RG   02
MPS$GL_SCNDMSKC          00000020 RG   02
MPS$GL_SCNDMSKT          00000024 RG   02
MPS$GL_SECREQFLG         00000040 RG   02
MPS$GL_STATE             00000014 RG   02
MPS$GL_STOPFLAG          00000034 RG   02
MPS$GQ_MPSTRTIM          00000050 RG   02
MPS$K_ERLBUFSIZ        = 00000200
MPS$K_INITSTATE        = 00000005
MPS$T_INV_NACK           00000078 RG   02
SCH$GC_NULLPCB           ******** X    02
```

```
                           +-----------------+
                           ! Psect synopsis !
                           +-----------------+
```

```
PSECT name              Allocation        PSECT No.  Attributes
----------              ----------        ---------  ----------
. ABS .                 00000000 (     0.)  00 (  0.)  NOPIC  USR  CON  ABS  LCL NOSHR NOEXE NORD  NOWRT NOVEC BYTE
$ABS$                   00000000 (     0.)  01 (  1.)  NOPIC  USR  CON  ABS  LCL NOSHR  EXE   RD    WRT NOVEC BYTE
$$$MPDATA               000000E4 (   228.)  02 (  2.)  NOPIC  USR  CON  REL  LCL NOSHR  EXE   RD    WRT NOVEC LONG
$$$ERLBUF               00000400 (  1024.)  03 (  3.)  NOPIC  USR  CON  REL  LCL NOSHR  EXE   RD    WRT NOVEC QUAD
$$$INTSTK               00000400 (  1024.)  04 (  4.)  NOPIC  USR  CON  REL  LCL NOSHR  EXE   RD    WRT NOVEC LONG
```

```
                     +----------------------------+
                     ! Performance indicators !
                     +----------------------------+
```

```
Phase                   Page faults   CPU Time      Elapsed Time
-----                   -----------   --------      ------------
Initialization               32       00:00:00.10   00:00:00.56
Command processing          155       00:00:00.95   00:00:06.06
Pass 1                      164       00:00:02.68   00:00:09.60
Symbol table sort             0       00:00:00.16   00:00:00.17
Pass 2                       52       00:00:00.73   00:00:02.44
Symbol table output           5       00:00:00.03   00:00:00.07
Psect synopsis output         2       00:00:00.03   00:00:00.03
```

MPDAT   - MULTI-PROCESSING DATA BASE   16-SEP-1984 02:00:27 VAX/VMS Macro V04-00   Page 7
VAX-11 Macro Run Statistics   5-SEP-1984 02:06:11 [MP.SRC]MPDAT.MAR;1   (1)

Cross-reference output   0   00:00:00.00   00:00:00.00
Assembler run totals   412   00:00:04.68   00:00:18.93

The working set limit was 1050 pages.
10468 bytes (21 pages) of virtual memory were used to buffer the intermediate code.
There were 10 pages of symbol table space allocated to hold 168 non-local and 0 local symbols.
194 source lines were read in Pass 1, producing 18 object records in Pass 2.
15 pages of virtual memory were used to define 14 macros.

```
                                   +-----------------------------+
                                   ! Macro library statistics !
                                   +-----------------------------+
```

Macro library name   Macros defined
-------------------   --------------
-255DUA28:[MP.OBJ]MP.MLB;1   2
-255DUA28:[SYS.OBJ]LIB.MLB;1   6
-255DUA28:[SYSLIB]STARLET.MLB;2   3
TOTALS (all libraries)   11

257 GETS were required to define 11 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS$:MPDAT/OBJ=OBJ$:MPDAT MSRC$:MPPREFIX/UPDATE=(ENH$:MPPREFIX)+MSRC$:MPDAT/UPDATE=(ENH$:MPDAT)+EXECML$/LIB+LIB$:MP.MLB/LI

MPERRLOG
LIS

MPSCBVEC
LIS

MPINT
LIS

MPPFM
LIS

MPDAT
LIS

MPPWRFAIL
LIS

MPMCHECK
LIS

MPINTEXC
LIS

MPLOG
LIS

MPERRMSG
LIS

MPSCHED
LIS

MPSHWPFM
LIS

MPLOAD
LIS

MPINIT
LIS